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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/820,970	03/30/2001	Motohide Tamura	Q63782	6901

7590

01/29/2003

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EXAMINER

MENEFEE, JAMES A

ART UNIT

PAPER NUMBER

2828

DATE MAILED: 01/29/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/820,970

Applicant(s)

TAMURA ET AL.

Examiner

James A. Menefee

Art Unit

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 20 December 2002.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-13 ~~1-15~~ is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-13 ~~1-15~~ is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Paul IP
PAUL IP
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 2800

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 30 March 2001 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892) 4) ☐ Interview Summary (PTO-413) Paper No(s). _____
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948) 5) ☐ Notice of Informal Patent Application (PTO-152)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____ 6) ☐ Other: _____

DETAILED ACTION

Response to Amendment

In response to the amendment filed 20 December 2002, the specification and claims 2, 5, 7, and 9 are amended. Claims 1-~~13~~¹³ are pending.

Drawings

Figures 13, 14, and 15 should be designated by a legend such as --Prior Art-- because only that which is old is illustrated. See MPEP § 608.02(g). A proposed drawing correction or corrected drawings are required in reply to the Office action to avoid abandonment of the application. The objection to the drawings will not be held in abeyance.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claim 1 is rejected under 35 U.S.C. 102(b) as being anticipated by Turner (US 4,905,249). Turner discloses a laser oscillator comprising laser oscillation means 12 for employing a discharge to excite a laser gas and to generate a laser beam, a box for storing these means, and an optical catalyst 22 formed on the inner wall of said box.

Claims 1 and 7 are rejected under 35 U.S.C. 102(b) as being anticipated by Macken (US 4,897,848).

Regarding claim 1, Macken discloses a laser oscillator comprising laser oscillation means for employing a discharge to excite a laser gas and to generate a laser beam, a box for storing these means, and an optical catalyst formed on the inner wall of said box.

Regarding claim 7, Macken discloses a laser oscillator comprising laser oscillation means for employing a discharge to excite a laser gas and to generate a laser beam, a box for storing these means, and a portion on the inner wall of said box that receives and reflects light generated by the oscillation means so that the light passes back through the discharge area (see entire document, especially Summary of Invention col. 1-2).

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 2-3, and 8-13 are rejected under 35 U.S.C. 103(a) as being unpatentable over Turner. Turner discloses the limitations of claim 1 as shown above.

Regarding claim 2, it is not disclosed that the catalyst is formed on a plate that is formed on the inner wall of the box. Placing the catalyst on a plate rather than directly on the box would not significantly change the operation of the device, and therefore this change would be a matter of obvious engineering design choice.

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Regarding claim 3, it is not disclosed that the catalyst decomposes NO_x. However, Turner discloses the catalyst will decompose CO, which is a deteriorated portion of the laser gas. NO_x is known as a deteriorated portion of a laser gas, and it would have been obvious to one skilled in the art to use such a system in a laser that produces NO_x in order to remove the deteriorated portion of the laser gas, as taught by Turner.

Regarding claim 8, there is not disclosed a sensor for sensing the uv light. It is well known in the art to include sensors in laser systems to sense the emitted light. It would have been obvious to one skilled in the art to include such a sensor so that the characteristics of the light may be monitored and so that one can take appropriate action in response to any changes in the characteristics, as is well known.

Regarding claim 9, Turner discloses a laser oscillator comprising laser oscillation means 12 for employing a discharge to excite a laser gas and to generate a laser beam, cooling means 16 for cooling said laser gas, a collector 22 for removing an unwanted portion of the gas from the laser gas, a box for storing these elements, where the collector is located along a path of gas circulation between the laser and the cooling element. It is not disclosed that the unwanted portion of the gas to be removed is HF, however it would have been obvious to remove this unwanted portion of the gas, as shown in the rejection of claim 3 above.

Regarding claims 10-11, it is not disclosed that the collector contains activated carbon or aluminous silica gel. However, it is well known to use such materials with catalysts. It would have been obvious to one skilled in the art to include active carbon or aluminous silica gel in the collector as a carrier for the catalysts, as is well known.

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Regarding claims 12-13, Turner discloses that the catalyst is located behind a mesh to contain the catalyst.

Claims 4-6 are rejected under 35 U.S.C. 103(a) as being unpatentable over Turner in view of Holcomb et al. (previously cited US 4,261,753). Turner discloses the limitations of claim 1 as shown above, and teaches the limitations of claims 2-3 and 8-13. However, there is not taught a graphitized layer formed on an inner wall of the box. Holcomb teaches that a graphitized layer may be used to coat the inside of a laser system (see summary of invention, col. 2). It would have been obvious to one skilled in the art to use such a graphitized layer inside of a laser system because such a layer is stable when in contact with corrosive laser gases, as taught by Holcomb.

Response to Arguments

Applicant's arguments with respect to the 103 rejections have been considered but are moot in view of the new ground(s) of rejection.

Applicant's arguments with respect to the 112 rejections are persuasive. The specification gives life to the "means plus function", therefore one skilled in the art would know how a laser operation is produced by the laser oscillation means.

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Conclusion

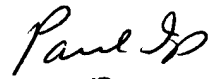
The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. The references either show a gas laser employing a catalyst, or show that catalysts may be combined with activated carbon and aluminous silica gel.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to James A. Menefee whose telephone number is (703) 605-4367. The examiner can normally be reached on M-F 8:30-5.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Paul Ip can be reached on (703) 308-3098. The fax phone numbers for the organization where this application or proceeding is assigned are (703) 872-9318 for regular communications and (703) 872-9319 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308-0956.

JM
January 23, 2003


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